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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RUTHKOSKY, MARK

ART UNIT

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1745

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/733,762	Applicant(s) YAMADA ET AL.	
	Examiner Mark Ruthkosky	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 5-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4 and 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The rejection of claim 3 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been overcome by applicant's amendment to the claims.

Claim Objections

The objection to claims 1-4 are objected to because of informalities has been overcome by applicant's amendment to the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 7, 8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by

Gauthier et al. (US 5,415,954.)

The instant claims are to a polymer battery having at least one layer of a positive electrode, at least one layer of a polymer electrolyte retained by a separator and at least one layer of a negative electrode, each of which is in a thin film form, stacked in this order, wherein the entirety of the outer peripheries of the separator and of the negative electrode is positioned outside of the outer periphery of the positive electrode except for a collector tab (4) provided to the positive electrode so as to protrude from one side of the positive electrode, and the following relationship is satisfied in a portion of the outer peripheries of the separator and of the negative electrode: the length between the end of the negative electrode and the end of the positive electrode $>$ the length between the end of the negative electrode and the end of the separator.

Gauthier et al. (US 5,415,954) teaches a polymer battery having at least one layer of a positive electrode, at least one layer of a polymer electrolyte retained by a separator and at least one layer of a negative electrode, each of which is in a thin film form, stacked in this order (see figure 4 and col. 10.) Figure 1 teaches that the electrodes may be stacked or wound to form a battery (figure 1h, col. 6, lines 10-17.) The electrodes are taught to be in a rectangular, strip shape (see the figures, col. 9, line 20 to col. 10, line 60.) The polymer electrolyte separates the positive electrode from the negative electrode. The entirety of the outer peripheries of the separator and of the negative electrode is positioned outside of the outer periphery of the positive electrode except for a collector tab provided to the positive electrode so as to protrude from one side of the positive electrode (see the figures, the corresponding text and specifically figure 4.) The following relationship is satisfied in a portion of the outer peripheries of the separator and of the negative electrode: the length between the end of the negative electrode and the end of the positive electrode (D1) $>$ the length between the end of the negative electrode and the end of the

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separator (D2) (see figure 4B, for example.) With regard to claims 7 and 11, MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." As the lengths of the positive electrode and electrolyte are within the periphery of the negative electrode, the lithium does not deposit on the end portion of the negative electrode during charge/discharge. Thus, the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gauthier et al. (US 5,415,954), in view of Rouillard et al. (US 6,120,930.)

The teachings of Gauthier et al. (US 5,415,954) have been presented. The reference does not teach a polymer battery wherein the length between the end of the negative electrode and the end of the separator is set at a value which is 20% or less of the length between the end of the negative electrode and the end of positive electrode. It would have been obvious to one of ordinary skill in the art at the time the invention was made to set the length between the end of the negative electrode and the end of the separator at a value which is 20% or less of the length

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between the end of the negative electrode and the end of positive electrode in order to prevent short-circuiting by contact between the negative electrode and the end of positive electrode. One of ordinary skill in the art would have recognized at the time of the invention that adding more separator/electrolyte between the ends of the opposite electrodes will help prevent contact between the negative electrode and the positive electrode in the event of the jarring the cell, or other like instances, wherein the electrodes are shifted out of alignment.

Further, the reference does not teach a polymer battery wherein the two sides of the positive electrode are provided with polymer electrolytes, respectively, retained by separators, and at least portions of the separators are linked to each other. Rouillard et al. (US 6,120,930) teaches a polymer battery having at least one layer of a positive electrode, at least one layer of a polymer electrolyte retained by a separator and at least one layer of a negative electrode, each of which is in a thin film form, stacked in this order (see figure 1 and cols. 3-4.) The following relationship is satisfied in a portion of the outer peripheries of the separator and of the negative electrode: the length between the end of the negative electrode and the end of the positive electrode (D1) > the length between the end of the negative electrode and the end of the separator (D2). The reference teaches a polymer battery wherein the two sides of the positive electrode are provided with polymer electrolytes, respectively, retained by separators. The reference does not teach portions of the separators linked to each other. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the positive electrodes of Gauthier et al. (US 5,415,954) in a configuration wherein two sides of the positive electrode are provided with polymer electrolytes, as taught by Rouillard et al. (US 6,120,930 as this configuration allows for both electrodes to transfer electrons from a shared

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current collector as noted in figure 1 of Rouillard. Sharing a current collector between two adjacent cells will allow for fewer collectors and a lower battery weight. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insulate the end edges of the current collectors from contact with negative electrodes, which will short-circuit the battery. One of ordinary skill in the art would have recognized at the time of the invention that adding more separator/electrolyte between the ends of the opposite electrodes will help prevent contact between the negative electrode and the positive electrode in the event of the jarring the cell, or other like instances, wherein the electrodes are shifted out of alignment.

The artesian would have found the claimed invention to be obvious in light of the teachings of the references.

Response to Arguments

Applicant's arguments filed 3/16/2006 have been fully considered but they are not persuasive. Applicant has amended the claims to a thin film, stacked flat battery and argues that the Fig. 4 embodiments of U.S. Patent 5,415,954 to Gauthier et al. describe wound devices rather than flat devices. This argument is not persuasive as the Gauthier et al. reference teaches embodiments where the battery may be stacked flat or wound (see figure 1.)

Applicant further argues that, "nowhere does U.S. Patent 5,415,954 to Gauthier et al. describe the entire outer periphery of separator (film c) and a negative electrode (films d/e) as being positioned outside an entire outer periphery of positive electrode (film b). For example, a top edge of lithium sheet b of Fig. 4 protrudes beyond the top periphery of films (e) and (d/e)." This argument is not persuasive as the components of the battery in figure 4 meet the limitations

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of the claim. In the figure, the cathode is (d), the separator is (c), and the anode is (b), (see col. 10, line 15-40.) The length between the end of the negative electrode and the end of the positive electrode is greater than the length between the end of the negative electrode and the end of the separator (see figure 4B, for example.) The current collector of the positive electrode is a collector tab and this is the only feature that extends beyond the periphery of the other elements noted.

Rouillard et al. (US 6,120,930) is cited because the Gauthier reference does not teach a polymer battery wherein the two sides of the positive electrode are provided with polymer electrolytes, respectively, retained by separators, and at least portions of the separators are linked to each other. Rouillard et al. (US 6,120,930) teaches a polymer battery having at least one layer of a positive electrode, at least one layer of a polymer electrolyte retained by a separator and at least one layer of a negative electrode, each of which is in a thin film form, stacked in this order. The length between the end of the negative electrode and the end of the positive electrode is greater than the length between the end of the negative electrode and the end of the separator. Further, the reference teaches a polymer battery wherein the two sides of the positive electrode are provided with polymer electrolytes, respectively, retained by separators. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky

Primary Patent Examiner

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5.25.2007